

Serial No. 09/687,348
Response Dated December 1, 2004
Reply To Office Action Of June 1, 2004

REMARKS

In the Office Action dated June 1, 2004, the Examiner noted that claims 1-38 are pending in the application, and that claims 1-38 are rejected under one or more of the following statutory sections: 35 U.S.C. §112, 35 U.S.C. §102, and 35 U.S.C. §103. By this response, Applicants have cancelled claims 1-12, 18-20, and 22-37 and Applicants have amended claims 13-17 and 38.

In view of the above amendments and the following remarks, Applicants submit that the claims pending in the application are believed to be definite under 35 U.S.C. §112, novel under 35 U.S.C. §102, and nonobvious under 35 U.S.C. § 103. Thus, Applicants believe that the application is in condition for allowance.

I. REJECTION OF CLAIMS UNDER 35 U.S.C. §112

Claim 3 has been rejected under 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as their invention. Claim 3 has been cancelled.

II. REJECTION OF CLAIMS UNDER 35 U.S.C. §102(e)

The Examiner rejected claims 1-5, 7-10, 12-19, 21-23, 25-33, 35, and 37 as being anticipated by U.S. Patent 6,271,946 issued to Chang et al. (hereinafter referenced as "Chang"). Since, claims 1-5, 7-10, 12, 18, 19, 22, 23, 25-33, 35 and 37 have been cancelled and since claims 13-17 and 21 have been amended, this rejection is respectfully traversed.

Chang states that he has created a system and method to propagate a data payload from an input network element to an output network element over a WDM network composed of a plurality of network elements and links interconnecting the network elements. In particular, Chang through the optical network module (element 203 in the transmitter) determines alternative routes through the network, generates replicated versions of the data payload at the input network element, adds a special optical header to each replicated version of the data payload to indicate the local route through each network element, transmits and routes each packet over its

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respective link through the network elements along the route indicated in the header all the way to the output network element. *See Chang patent, col. 4, line 45 to col. 5, line 4.* The alternative paths through the network are referenced by Chang as "diverse network paths", "multiple paths", and "multiple disjoint paths" at various places in the Chang patent.

Concerning replicated packets, Chang states that, "IP packets contained in each information flow are transported over at least two copies of several randomly selected wavelength channels via choices of multiple disjoint paths." *See Chang at col. 7, lines 63-66.* In fact, Chang clarifies that it is really "packet shares" or a "collection of packets from a particular session" that traverse the paths on a particular WDM channel. *See Chang at col. 7, lines 22-34.* The concept of shares is shown clearly in Figs. 3A and B of Chang.

As shown in, and described with respect to, Fig. 10 of Chang, the input stream of packets is replicated so that two identical streams are available for transmission. Each identical packet stream is subdivided and scrambled into four streams. The resulting eight streams are rearranged by a cross-connect element into two sets of four streams each. Each of these streams is then modulated onto an optical carrier wherein each set of four streams results in streams at four different wavelengths. One set of streams at four different wavelengths is multiplexed onto a first link and the other set of streams at four different wavelengths is multiplexed onto a second link. The links represent two different paths though the network. *See Chang at col. 17, line 1 through col. 18, line 32.*

Chang presents one restriction in methodology, namely, that the "scrambling technique ensures that all the packet information will not be duplicated on an individual optical wavelength at the output of arrangement 1000." *See Chang, col. 17, ll. 39-42.* So Chang is concerned with making sure that replicated packets travel via different wavelengths. Chang does not express any concern with replicated packets traveling via the same link. In fact, one can simply observe that packets A and A' travel on the same link (link 2) and that packets K and K' travel on the same link (link 1). Chang does nothing to insure that a pair of packets, that is, a packet and its replica, travels through the network over diverse or disjoint or different paths.

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At the receiver, shown in Fig 12 of Chang, the process described above is undone to recreate the original stream of packets and its replica. IP selector 1220 "is used to choose one of the multiple disjoint paths that carry the information of a single communication session, and delivers this selected stream to the IP destination depicted by element 1210." See *Chang* at col. 19, lines 1-4. In Fig. 13, Chang shows that the selection step at step 1340 "depicts processing wherein one stream from the plurality of detected streams is selected from delivery to the destination." See *Chang*, col. 19, lines 53-55. While Chang includes a selection operation in his description, there are no details about how selection of a particular packet stream is performed or what detailed elements are used in the selection operation.

Applicants have defined a method in amended independent claim 13 as follows:

A method for use in a node of a packet network, the method comprising the steps of:

receiving multiple copies of a signaling packet from at least two diverse communication paths;

calculating a counter value related to a received packet identifier;

comparing the counter value with a packet identifier in each of the multiple copies of the received signaling packet to identify the multiple copies of the signaling packet; and

selecting one of the received multiple copies of the packet in response to comparing each packet identifier in the received multiple copies of the packet, wherein the one signaling packet selected is chosen without regard to the diverse communication path on which it is received.

Nowhere does Chang teach the application of his method and apparatus to signaling packets. Instead, Chang focuses exclusively on data packets. Chang mentions operation on a signaling header but does not even remotely suggest the presence of a signaling packet as claimed by Applicants. "Signaling packet" is a term of art and is mentioned throughout the specification, such as at page 3, lines 11-27. The term as used and defined by Applicants does not refer to a header that is appended to a standard data or message packet.

Nowhere does Chang guarantee that his pairs of replicated packets traverse the network over diverse communication paths as claimed by Applicants. Chang restricts his replicated pairs to be at different wavelengths but provides no further restriction as

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to the paths that the replicated packets travel. Applicants require that the replicated packets traverse the network over completely different or divers communication paths.

Nowhere does Chang teach, show or suggest the calculating and comparing steps defined by Applicants in amended claim 13. Moreover, Chang fails to suggest even remotely that selection is performed in response to the comparison of packet identifiers from the calculating and comparing steps. Chang mentions that packet selection is performed, but Chang's explanation includes no calculating, comparing, or selecting steps as defined in Applicants' amended claim 13.

Since Chang does not teach, show, or suggest the particular method steps defined by Applicants, Chang clearly does not teach, show or suggest each and every element of Applicants' claimed invention. Applicants submit that claim 13 is not anticipated by the Chang patent. Claims 14-17 and 21 depend, either directly or indirectly, from amended claim 13 and include all the limitations of the base claim. Since claim 13 is not anticipated by Chang, it is submitted that those claims dependent from claim 13, namely, claims 14-17 and claim 21, are also not anticipated by Chang. Therefore, it is submitted that claims 13-17 and claim 21 are allowable under 35 U.S.C. §102.

III. REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a)

Rejection over Chang in view of O'Connor

Claims 7, 11, 20, 24, 34, 36 and 38 stand rejected as being unpatentable over U.S. Patent 6,271,946 issued to Chang et al. (hereinafter "Chang") in view of U.S. Patent 6,356,544 issued to O'Connor (hereinafter "O'Connor"). Since claims 7, 11, 20, 24, 34, and 36 have been cancelled and since claim 38 has been amended, this rejection is respectfully traversed.

Claim 38 depends directly from claim 13. Since claim 13 has been distinguished from the teachings of Chang in Section II of this response and because claim 38 includes all the limitations already present in amended claim 13, it is submitted that Chang fails to teach, show, or suggest the unique combination of steps present in claim 38. The Examiner is believed to agree with this view based on the statement in

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the present Office Action that, Chang "fails to teach the replicated packet conveys an identical packet identifier in an additional shim header of an MPLS packet."

According to the present Office Action, O'Connor ('544) has been added to the Chang reference ('946) for the proposition that O'Connor "teaches that the benefit of using MPLS label switched paths can be merged to form multipoint to point trees.... Hence, one skilled in the art would have been motivated by '544 to modify '946 to include the MPLS shim header for such benefit." Assuming that this is true, and Applicants do not so believe, then the addition of O'Connor to Chang still fails to fill in the method steps claimed by Applicants and missing from Chang.

Nowhere does the combination of O'Connor and Chang teach the application of his technique to signaling packets. Instead, the combined references focus exclusively on data packets. Although Chang mentions operation on a signaling header, the combined references do not suggest the presence of a signaling packet as claimed by Applicants. As mentioned above, "signaling packet" is a term of art and is mentioned throughout the specification, such as at page 3, lines 11-27. The term as used and defined by Applicants does not refer to a header that is appended to a standard data or message packet.

Nowhere do the combined references guarantee that pairs of replicated packets traverse the network over diverse communication paths as claimed by Applicants. While Chang restricts his replicated pairs to traverse the network on different wavelengths but neither of the combined references provides further restriction as to the paths that the replicated packets travel. Applicants require that the replicated packets traverse the network over completely different or divers communication paths.

Nowhere do the combined references teach, show or suggest the calculating and comparing steps defined by Applicants in the base claim. Moreover, both references fail to suggest that selection is performed in response to the comparison of packet identifiers from the calculating and comparing steps. Chang mentions that packet selection is performed in a generic manner, but Chang provides no explanation about how the selection is performed in detail. The combined references provide no

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explanation about calculating, comparing, or selecting steps as defined in Applicants' amended base claim.

In light of the remarks above, it is submitted that neither Chang nor O'Connor, separately or in combination, teach, show, or suggest the particular method steps defined by Applicants in the base claim 13 whose limitations are present in their entirety in dependent claim 38. Hence, it is submitted that Applicants' claimed invention defined in claim 38 would not have been obvious to a person skilled in the art upon a reading of the Chang and O'Connor references at the time the claimed invention was made. Therefore, Applicants believe that claim 38 is allowable under 35 U.S.C. §103.

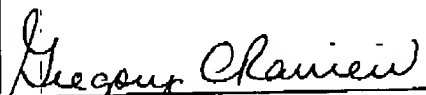
CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Reconsideration and allowance are respectfully solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Gregory C. Ranieri, Esq. at (732) 383-1394 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

DECEMBER 1, 2004


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